

## MECHANICAL PROPERTIES

Norm	Steel grade	Delivery condition +C			Delivery condition +LC			Delivery condition +SR			Delivery condition +A			Delivery condition +N		
		ReH Mpa	Rm Mpa	All. %	ReH Mpa	Rm Mpa	All. %	ReH Mpa	Rm Mpa	All. %	ReH Mpa	Rm Mpa	All. %	ReH Mpa	Rm Mpa	All. %
<b>EN 10305-1</b> (Seamless tubes)	<b>E215</b>	0.8Rm	430	8	0.7Rm	380	12	280	380	16	0.5Rm	280	30	215	290-430	30
	<b>E235</b>	0.8Rm	480	6	0.7Rm	420	10	350	420	16	0.5Rm	315	25	235	340-480	25
	<b>E355*</b>	0.8Rm	640	4	0.7Rm	580	7	450 <sup>A</sup>	580	10	0.5Rm	450	22	355	490-630	22
	<b>E410</b>	0.8Rm	750	4	0.7Rm	620	8	590	690	12	0.5Rm	520	22	410	550-700	22
	<b>P460*</b>	-	-	-	-	-	-	660	700	15	-	-	-	440	560	19
<b>EN 10305-2</b> (Welded tubes)	<b>E155</b>	0.8Rm	400	6	0.7Rm	350	10	245	350	18	0.5Rm	260	28	155	270-410	28
	<b>E195</b>	0.8Rm	420	6	0.7Rm	370	10	260	370	18	0.5Rm	290	28	195	300-440	28
	<b>E235</b>	0.8Rm	490	6	0.7Rm	440	10	325	440	14	0.5Rm	315	25	235	340-480	25
	<b>E275</b>	0.8Rm	560	5	0.7Rm	510	8	375	510	12	0.5Rm	390	22	275	410-550	22
	<b>E355*</b>	0.8Rm	640	4	0.7Rm	590	6	435	590	10	0.5Rm	450	22	355	490-630	22
<b>EN 10305-4</b> (Seamless tubes)	<b>E215</b>	-	-	-	-	-	-	-	-	-	-	-	-	215	290-430	30
	<b>E235*</b>	-	-	-	-	-	-	-	-	-	-	-	-	235	340-480	25
	<b>E355</b>	-	-	-	-	-	-	-	-	-	-	-	-	355	490-630	22

**Note: the values stated in the table are the minimum requirements foreseen by the norm (manufacture specification for the steelgrade P460). When two values are stated, they have to be considered as the minimum and maximum values.**

<sup>A</sup> For tubes with OD > 160 mm ReH≥420 Mpa.

\* Standard stock.

The minimum elongation values refer to longitudinal samples.

For tubes according to EN 10305-4, for dia ≤ 30 mm and w.t. ≤ 3 mm, the yield strength min. values are 10 Mpa lower than the values given in the table.

## STEELGRADES AND COMPARISON TABLE

EN Norms			UNI Norms	DIN Norms	AFNOR Norms	Steels according to manufacturers' specifications
EN 10305-1	EN 10305-2	EN 10305-4				
<b>E215</b>			Fe280 UNI 7945	St 30Si DIN 2391	Tu37b NF A 49-310	
<b>E235</b>			Fe360 UNI 7945	St 35 DIN 2391	-	
<b>E355</b>			Fe490 UNI 7945	St 52 DIN 2391	Tu52b NF A 49-310	
<b>E410</b>			-	-	-	P460 (StE460)
	<b>E155</b>		Fe280 UNI 7946	-	-	
	<b>E195</b>		Fe320 UNI 7946	RSt 34.2 DIN 2393	-	
	<b>E235</b>		Fe360 UNI 7946	RSt 37.2 DIN 2393	-	
	<b>E275</b>		-	-	-	
	<b>E355</b>		Fe490 UNI 7946	St 52.3 DIN 2393	-	
		<b>E215</b>	Fe360 UNI 7946	RSt 34.2 NBK DIN 2391	-	
		<b>E235</b>	-	RSt 37.2 NBK DIN 2391	-	
		<b>E355</b>	Fe490 UNI 7946	St 52.3 NBK DIN 2391	-	